

Application No.: 09/851,324

Docket No.: 21776-00057-US

REMARKS

Bearing in mind the comments in the Official Action, the application has been amended so as to place it in condition for allowance. An early indication of same would be appreciated.

Claims 22-26 are now pending in this application. Claims 22 and 23 are independent. Claims 15-21 have been cancelled, and claims 22-26 have been added by this amendment. No new matter is implicated by any new claim.

Information Disclosure Statement

With respect to the Examiner's comments concerning the Information Disclosure Statement filed May 9, 2001, a Replacement IDS including the list of references cited and considered in the parent application have been resubmitted.

In addition, a copy of the face of the issued parent US Patent 6,509,645 is enclosed, showing the list of references cited and considered by the Examiner. Of the twelve references cited, eleven were cited by the Examiner, and one by the Applicant. An initialed copy of the 1449 showing consideration of the Applicant-submitted reference by the Examiner is also enclosed.

Copies of the references cited in a patent application are not required to be resubmitted in a continuing application in order to be considered. In accordance with the MPEP, there is a presumption that the Examiner has considered references cited in a parent application. This IDS is submitted merely for the convenience of the Examiner, and to ensure that these references are cited on the face of any patent that may issue from this application.

Consideration and acknowledgement of the IDS is requested.

Claim Objection

Withdrawal of the objection to claim 16 is requested, as this claim has been cancelled.

Indefiniteness Rejections under 35 USC §112, 2d Paragraph

Withdrawal of the rejection of claims 16 and 21 as being indefinite is requested. These

Application No.: 09/851,324

Docket No.: 21776-00057-US

claims have been cancelled, thus rendering their rejection moot.

Unpatentability Rejection under 35 USC §103(a)

Withdrawal of the rejection of claims 15-17 and 21 under 35 USC §103(a) as being unpatentable over Ishikawa (USP 5,955,776) in combination with Kanatake (USP 6,178,654) is requested. These claims have been cancelled, thus rendering their rejection moot.

Withdrawal of the rejection of claim 18 under 35 USC §103(a) as being unpatentable over Ishikawa and Kanatake in further view of Kotchkiss (USP 5,028,546) is requested. Claim 18 has been cancelled, thus rendering its rejection moot.

Withdrawal of the rejection of claims 19-20 under 35 USC §103(a) as being unpatentable over Iskikawa and Kanatake in further view of Yeh et al. (USP 5,803,340) is requested. Claims 19-20 have been cancelled, thus rendering their rejection moot.

Newly presented claims 22-26

Claims 22-26 have been drafted so as to avoid the previous objection and rejections, as well as the applied and cited art, and are submitted as further defining patentable subject matter.

Independent claim 22 recites that, when conducting falls temporarily arranged on an arrangement substrate or transferred onto and joined to surface electrodes on a spherical semiconductor element, the position of each conductive ball is controlled on the arrangement substrate. A gap is formed between the surface of the arrangement substrate and the surface of the spherical semiconductor element so that the conductive balls are transferred and joined by thermo-compression bonding.

New independent claim 23 recites that the conductive balls are transferred and joined by melting, as well as additional actions discussed above with respect to independent claim 22.

Thus, according to the claimed invention, by specifically defining the manner of transferring and joining, suitable bump bonding is realized. Further, easier and more reliable electrical connection with an external component is made possible through the conductive balls.

Application No.: 09/851,324

Docket No.: 21776-00057-US

None of the applied or cited art alone or in combination, teaches or suggests all of the specifically recited features in the claims. For example, applicants note that Hotchkiss only discloses joining each sphere 161 to a plate member as illustrated in figure 6, for example. In contrast, according to the claimed invention, each conductive ball is joined to a spherical member. Thus, Hotchkiss and the claimed invention are clearly different from each other. Further, Yeh et al. discloses that paste solder bumps are joined by melting, as illustrated in figures 1-3. In contrast, according to the claimed invention, solid conductive balls are joined by melting.

Dependent claims 24-26 are submitted to further recite additional features of the claimed invention.

Consideration and allowance of new claims 22-26 are respectfully requested.

In view of the above, each of the presently pending claims 22-26 in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

In the event the Examiner believes that an interview will serve to expedite prosecution of this application, the undersigned attorney is available at the telephone number indicated below.

The Commissioner is hereby authorized to charge any fees, or credit any overpayment, associated with this communication, including any extension fees, to CBLH Deposit Account No. 22-0185

Respectfully submitted,

By Larry J. Hume
Larry J. Hume

Registration No.: 44,163
CONNOLLY BOVE LODGE & HUTZ LLP
1990 M Street, N.W., Suite 800
Washington, DC 20036-3425
(202) 331-7111
(202) 293-6229 (Fax)
Attorneys for Applicant